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ABSTRACT

A study evaluated the Chapter 1 Reading Skills Center program which provided supplementary, individualized instruction in reading and writing to 176 eligible students in grades four through eight from four nonpublic schools in New York City. Major goals were to enable students to develop competency in reading and to integrate reading skills into all subject areas in the classroom. Face-to-face services were offered to 144 students, while 32 students received a combination of face-to-face and computer-assisted instruction (CAI). The program was evaluated through site visits, review of data from program documents, interviews with program teachers, and analyses of mean gains in standardized test scores. Results indicated that overall mean gains for students receiving face-to-face instruction were statistically significant, meeting the program's criterion for success. The overall mean gains for students receiving face-to-face instruction in combination with CAI were statistically significant for the reading comprehension and language mechanics subtests, also meeting the program's criterion for success. The overall gain on the language expression subtest was not statistically significant and did not meet the criterion for success. Chapter 1 teachers utilized a rich repertoire of teaching strategies derived from staff development, and a parental involvement program sponsored workshops for parents and kept them informed of their children's progress. (Eight tables of data are included, and one appendix includes a brief description of Chapter 1 Nonpublic School Reimbursable Services, 1988-89.) (MG)

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OREA Report

EVALUATION SECTION REPORT

CHAPTER 1
READING SKILLS CENTER PROGRAM
1988-89

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EVALUATION SECTION
John Schoener, Chief Administrator
March 1990

EVALUATION SECTION REPORT

CHAPTER 1
READING SKILLS CENTER PROGRAM
1988-89

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OFFICE OF CHIEF EXECUTIVE FOR OPERATIONS
BUREAU OF NONPUBLIC SCHOOL REIMBURSABLE SERVICES

CHAPTER 1 READING SKILLS CENTER PROGRAM
1988-89

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CHAPTER 1 NONPUBLIC SCHOOLS READING SKILLS CENTER PROGRAM

EVALUATION SUMMARY, 1988-89

BACKGROUND

The Chapter 1 Reading Skills Center program provided supplementary, individualized instruction in reading and writing to 176 eligible students in grades four through eight from four nonpublic schools in New York City. Its major goals were to enable students to develop competency in reading and to integrate reading skills into all subject areas in the classroom. Face-to-face services were offered to 144 students, while 32 students received a combination of face-to-face and computer-assisted instruction.

In 1988-89, Chapter 1 funding for the program was $552,903. The staff included one coordinator and eight teachers. Participating students were bused or escorted to program sites for three to five sessions each week lasting from 30 to 60 minutes. Each teacher worked with small groups of four to five students.

IMPLEMENTATION

To determine whether the program was implemented as proposed, OREA evaluators reviewed data from program documents, site visits, interviews with program teachers, and analyses of mean gains in standardized test scores. The program objective was that students would make statistically significant normal curve equivalent (N.C.E.) gains from pretest to posttest on the Reading Comprehension, Language Expression, and Language Mechanics subtests of the California Achievement Test (CAT).

FINDINGS

Face-to-Face Instruction. The overall mean gains on all subtests for students receiving face-to-face instruction were statistically significant, meeting the program's criterion for success. In addition, overall gains increased from the previous year's gains on the Reading Comprehension subtest.

Combination Services. The overall mean gains for students receiving face-to-face instruction in combination with C.A.I. were statistically significant for the Reading Comprehension and Language Mechanics subtests, meeting the program's criterion for success. The overall gain on the Language Expression subtest was not statistically significant and did not meet the program's criterion for success.

Program Activities. The Chapter 1 teachers utilized a rich repertoire of teaching strategies derived from staff development. In addition, a Parental Involvement program sponsored workshops

for parents and kept them informed of their children's progress. About five parents attended each workshop.

RECOMMENDATIONS

Based on the evaluation findings and other information presented in this report, the following recommendations are made:

- The smallest mean gains for face-to-face only students on all subtests were made by grades four, six, and eight, on the Language Mechanics subtest. An exploration of the reasons why this subtest showed smaller gains from pretest to posttest than the others might suggest areas for emphasis in next year's curriculum.

- Curriculum and instructional techniques implemented in areas showing the strongest positive results for face-to-face only students such as grade seven on the Language Mechanics and Language Expression subtests, and grades five and six on the Reading Comprehension subtest, should be reinforced.

- Since the overall mean gain for combination services students on the Language Expression subtest was not statistically significant and, therefore, did not meet the program's criterion for success, the software curriculum that relates to the areas covered by this subtest should be reviewed to see how it might be improved.

ACKNOWLEDGEMENTS

The production of this document is a result of a collaborative effort of full-time staff and consultants. In addition to those whose names appear on the cover, Lois Freeman, Joan Formisano, Daralee Schulman, and John Ambrosio visited sites and collected data. Ilan Talmud analyzed the data upon which this evaluation is based. Yvonne Spoerri assisted with the preparation of tables. The unit could not have produced this evaluation without their participation.

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I. INTRODUCTION

PROGRAM PURPOSE

The Chapter 1 Reading Skills Center program provides supplementary, individualized instruction in reading and writing to eligible students in grades four through eight attending nonpublic schools in New York City. The goal of the program is to enable students to develop competency in reading so that they can integrate reading skills into all subject areas, and integrate reading with other communication skills, especially writing and thinking skills. In addition, the program is designed to help students develop a positive self-image through a series of successful experiences in the Reading Skills Center program and in the nonpublic school classroom.

ELIGIBILITY

Students were eligible for Chapter 1 services if they lived in a targeted attendance area and scored at or below a specific cutoff point on state-mandated tests or standardized reading tests. The majority of the schools use either the Scott Foresman Test or the Comprehensive Test of Basic Skills. The cut-off point for program eligibility ranged from three months below grade level for students in the first grade to two or more years below grade level for students in high school.

STUDENTS SERVED

In 1988-89, the Reading Skills Center program served 176 students in grades four through eight. The largest number of

students participating in the program, 27 percent, were in the seventh grade (see Table 1). The smallest number of students, 14 percent, were in the eighth grade.

Years Participated in the Program

Table 1 also shows the length of time students have been participating in the program. Close to three-fifths of the students (58 percent) participated in the program for the first time in 1988-89. Twenty-two percent of the students were in their second year of the program, and 20 percent had been in the program three or more years.

STUDENT PARTICIPATION IN OTHER CHAPTER 1 PROGRAMS

Many students participated in other Chapter 1 nonpublic school programs. Students who appeared to have social and/or emotional problems that might interfere with their learning were referred to the Clinical and Guidance program for diagnostic and counseling services.* Sixty-three percent of the Reading Skills Center students were referred to the Clinical and Guidance program. Students also participated in the Corrective Mathematics program when there was a demonstrated need. Ninety-one percent of the Reading Skills Center students participated in the Corrective Mathematics program.

DELIVERY OF CHAPTER 1 SERVICES: LEGAL PARAMETERS

On July 1, 1985, the Supreme Court held that local educational agencies' most common method of serving Chapter 1-

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* See Appendix A for a brief description of Chapter 1 Nonpublic School Reimbursable Services, 1988-89.

TABLE 1

Student Participation in the Reading Skills Center Program, by Grade and Years in Program, 1988-89

Grade[b]	N[a]	%	Number of Years in the Program					
			1		2		3 or more	
			N	%	N	%	N	%
4	28	16	27	96.4	1	3.6	--	--
5	41	23	24	58.5	15	36.6	2	4.9
6	35	20	22	62.9	9	25.7	4	11.4
7	47	27	23	48.9	7	14.9	17	36.2
8	24	14	5	20.8	7	29.2	12	50.0
Total	175	100	101	58.0	39	22.2	35	19.9

[a]Thirty-two of these students received computer-assisted instruction and the rest received face-to-face instruction.

[b]One student had missing data on grade level, making a total of 176 students.

- More than half (58 percent) of the students were participating in the program for the first time.
- Almost a fourth (22 percent) of the students were in the second year of the program.
- A fifth (20 percent) of the students were in the program three or more years.

eligible children--instruction by public school teachers on the premises of nonpublic schools--was unconstitutonal. As a result, alternative methods for providing Chapter 1 services were devised. Eligible students attending nonpublic schools now receive Chapter 1 services at mobile instructional units (M.I.U.s), public school sites, leased neutral sites, nondenominational schools, and, via computer-assisted instruction (C.A.I.), in designated computer labs in nonpublic schools.*

In order to comply with the Supreme Court ruling, Chapter 1 teachers are not present in the computer labs. Instead, they track student progress through the curriculum and assist the instructional process via modems from a Board of Education administrative center. Trained noninstructional technicians are present in the computer labs with students to operate and maintain the equipment and also to ensure order and safety. In order to further comply with the ruling, the hardware and software utilized for Chapter 1 students must be non-divertable; that is, it cannot be utilized in the nonpublic schools for anything but the instruction of Chapter 1 students. Therefore, the hardware/software configurations were put together with this in mind.

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* Public school sites are designated classrooms in public schools; leased neutral sites are classrooms in public buildings such as community centers; mobile instructional units are mobile classrooms generally parked outside the school being served.

PROGRAM OBJECTIVES

The following objective was to be achieved as a result of the implementation of the 1988-89 Reading Skills Center program:

- Students would make statistically significant N.C.E.* gains from pretest to posttest on the Reading Comprehension, Language Expression, and Language Mechanics subtests of the California Achievement Test (CAT).

PROGRAM EVALUATION

The purpose of the 1988-89 evaluation by the Office of Research, Evaluation, and Assessment/Instructional Support Evaluation Unit (OREA/I.S.E.U.) was to describe the implementation of the Reading Skills Center program and assess its impact on student achievement in language skills. The following methods were used to conduct this evaluation:

- Review of program documents and interviews with program staff to describe the program organization and funding; the curriculum, and staff development activities;
- Review of data retrieval forms that report information about grade placement, number of years in the program, frequency of contact time, and referrals to the Clinical and Guidance program;
- Analyses of students' scores on standardized reading tests administered in the fall and spring of the school year; and
- Classroom site observations, interviews with teachers, and staff development workshop observations.

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* N.C.E. scores are similar to percentile ranks but, unlike percentile ranks, are based on an equal interval scale. Scores are based on a scale ranging from 1 to 99 with a mean of 50 and a standard deviation of approximately 21. Because N.C.E. scores are equally spaced apart, arithmetic and statistical calculations such as averages are meaningful; in addition, comparisons of N.C.E. scores may be made across different achievement tests.

SCOPE OF THE REPORT

The purpose of this report is to describe the 1988-89 Chapter 1 Reading Skills Center program and assess the effectiveness of its implementation. The first chapter introduces the program, describes the students served and the evaluation methodology. Chapter II provides an overview of the program's organization and funding, including the curriculum, instructional approach, and other program activities. In Chapter III, program implementation, including information from observations of staff development workshops and classrooms, is described. Chapter IV reports on student attendance and academic achievement findings. Chapter V offers conclusions and recommendations. The appendix presents brief descriptions of Chapter 1 Nonpublic School Reimbursable 1988-89 programs.

II. PROGRAM DESCRIPTION

PROGRAM FUNDING AND ORGANIZATION

During 1988-89, the Reading Skills Center program was funded at $552,903. The staff included the program coordinator and eight teachers. Using a pull-out approach, the program provided instruction for 176 students from four nonpublic schools.

FACE-TO-FACE INSTRUCTION

Students from three nonpublic schools received supplemental, face-to-face reading skills instruction at two M.I.U.s and one neutral site. Each teacher worked with an average of four to five students in sessions lasting from 30 to 60 minutes. Students were scheduled for three to five sessions each week, with most students attending five sessions a week.

Curriculum

The Reading Skills Center program curriculum combines reading skills with metacognitive, or thinking strategies. Reading skills are reinforced through the use of the writing process.

Reading skills. Three reading skills areas form the core of the program's curriculum at all levels of instruction. They are the following:

- Phonic skills. Students learn to identify and understand words by recognizing and combining letters and sounds. For instance, the student learns to identify the short "a" sound in the word "bat."
- Structural analysis skills. Students learn what the

components of words mean and how they work. Examples of these components are: prefixes such as "pre," suffixes such as "ing" and "er" and singular and plural forms.

- Comprehension skills and strategies. Students learn how to use these skills and strategies to help them understand what they read. Examples are: predicting, inferencing, noticing details, and classifying.

Metacognitive skills. The curriculum helps students to become competent in the application of metacognitive strategies, or thinking skills, to the reading process. Students are taught to become aware of their thinking processes, so that they can identify the causes of comprehension breakdown and solve their reading problems independently.

Writing skills. Remedial activities in the writing component are used to motivate and reinforce reading skills. They include the writing of book reports and story summaries, as well as other exercises growing out of students' reading.

Instructional Approach: Diagnostic-Prescriptive

The Reading Skills Center program uses a diagnostic-prescriptive approach to provide individualized instruction to students. Students are tested formally and informally throughout the school year to:

1) assess individual strengths and weaknesses in reading skills in order to develop instructional objectives for each student; and

2) determine when students have mastered skill areas and are ready to move on to the next level of study.

Materials

A variety of materials designed to meet the needs, interests, and abilities of students are used, including

workbooks, reading kits, trade books, audio tapes, teacher-made materials, and materials designed by the program coordinator. Reading matter specific to the various content areas studied in the classroom such as history, mathematics, and science is used.

Program Activities: 1988-89

In addition to face-to-face instruction and computer assisted instruction, the Reading Skills Center program also included staff development and parental involvement activities.

Staff Development. The Reading Skills Center staff development program was designed to help teachers improve their instructional practices. Activities included workshops, a newsletter, supervisor observations, and post-observation conferences.

Parental Involvement: "Parents-as-Partners." In order to increase parental involvement in the Reading Skills Center Program, teachers were encouraged to interact with parents and were kept informed of the most recent research on working with parents. Parents were invited to attend workshops given by the teachers at the local Reading Skills Center sites. Ten workshops were scheduled, or two per site. About five parents attended each workshop.

The workshops were designed to help parents participate in teaching their children to read at home and, generally, to encourage parental support of school-based projects. Teachers gave an overview of activities in the Center. They also demonstrated ways in which materials were used in the classroom.

Diagnostic procedures were discussed to introduce parents to the concept of ongoing evaluations designed to show children's progress and growth.

The parents were also introduced to at-home activities developed as part of the Reading Skills Center "Parents-as-Partners" project. These activities included reading aloud to children and encouraging children to read at home. Library books were sent home with students for these activities.

In addition, reports on students' progress were sent home to parents twice a year, at midyear and in June. These reports provided information on students' achievement in skill areas and the number of library books students read.

COMPUTER-ASSISTED INSTRUCTION

Number of Schools On-line

By June of 1989, one school was on-line, with a program of Computer-assisted Instruction (C.A.I.) as part of the Reading Skills Center program. This was the first offering of C.A.I. by the Reading Skills Center program. Thirty-two students were participants.

Mode of Instruction: Combination Services

Students worked in the Chapter 1 computer labs in their nonpublic schools for 50 minutes, one day a week. In addition, three days a week they were escorted to a neutral site for 50 minutes of face-to-face instruction by the same Chapter 1 teacher who monitored their progress with C.A.I.

Monitoring Instruction at a Distance

In order to comply with the Supreme Court ruling, Chapter 1 teachers monitor student progress and intervene in the instructional process from computer rooms at the Board of Education administrative center. One room houses the computer work stations which include both computers and printers. These work stations may be shared with other Chapter 1 teachers. Not only are the computers connected via modems to the nonpublic school Chapter 1 computer labs, but there are also telephones in each room to allow the Chapter 1 teachers to speak to the non-instructional technicians who are located at the nonpublic school sites.

The software company provides a teacher manual which is also kept in the computer rooms. The manual contains information on the operation of the system, software curriculum contents, and the interpretation of printouts of individual and class progress reports.

The teachers' time in the computer rooms is divided between:

- Reading printouts of student progress and deciding what, if any, teacher intervention with the software is required;
- Previewing student lessons;
- Communicating with non-instructional technicians; and
- Staff development in C.A.I.

Adapting C.A.I. For Nonpublic School Chapter 1 Students

The software package used was originally designed for learning situations in which a teacher would be physically

present as students worked on the computers. Therefore, a major task of both the software company and the Chapter 1 staff has been to find ways of adapting this learning system to a situation in which teachers are not physically present. Teachers must not only learn the system, but they also must work with the software representatives to try to improve remediation and discover ways in which the software needs to be amended.

This adaptation process has been necessary for all the software used in C.A.I. for the various Chapter 1 nonpublic school programs. For two years, as C.A.I. has been implemented in the nonpublic schools, teacher feedback has contributed in varying degrees (depending on the company) to the software companies' development of their own product. Receptivity of software companies to teacher feedback is vital because of:

- the need to adapt C.A.I. to a situation where the teacher is not physically present; and
- the need to do this with a New York City remedial population at different grade levels.

C.A.I. Staff Development

The C.A.I. teachers, besides participating in the staff development of the Reading Skills Center program, also receive staff development directly from the software company in C.A.I. The software company representatives have scheduled training sessions throughout the school year on specific topics, and are available in person and by phone for individual problems. The software companies also provide training to the noninstructional technicians and hotlines are available for technical assistance.

The training task was made more complex by the differing levels of knowledge of the C.A.I. teachers. The availability, flexibility, and responsiveness (or lack thereof) of C.A.I. trainers was thus of great importance.

CONCLUSION

The 1988-89 Reading Skills Center program provided face-to-face instruction, and combination services to eligible students from nonpublic schools. In addition, the staff development program provided activities to enhance teachers' professional development and promote increased parental involvement in the education of their children.

III. PROGRAM IMPLEMENTATION

INTRODUCTION

The following chapter describes staff development activities and classroom observations and illustrates the influence of staff development on classroom instruction.

STAFF DEVELOPMENT

The Staff Development Program: An Overview

The goal of the 1988-89 staff development program was to help teachers improve their instructional practices. The program's approach stressed the integration of reading and writing skills with cognitive, or thinking, strategies. The program consisted of the following components:

- Workshops. The program coordinator and staff met to discuss professional issues through researched presentations, group discussions, and hands-on activities.
- Newsletter. A monthly newsletter, News and Views from the Reading Skills Center, written by the program coordinator, reviewed, developed, and expanded upon material covered in the workshops. It also explored additional research in the field.
- Field visits and post-observation conferences. Random site visits were made to classrooms throughout the school year by the program coordinator. These visits included observations of lessons, observations of one-on-one pupil-teacher conferences, and demonstration lessons by the coordinator. Post-observation conferences, at which professional and personal concerns were shared, were held between teachers and the coordinator.

Staff Development Workshops

Nine staff development workshops were held during the 1988-89 school year, including the "Eleventh Annual Reading and Writing Skills Workshops," a week-long series conducted in February.

The workshops were organized around pilot projects based upon information provided by the program coordinator on current research in the field. They consisted of presentations given by the program coordinator and teachers, with occasional invited speakers. The three main areas of instruction emphasized in staff development workshops involved reading, writing, and thinking skills. In addition, information on parental involvement was presented as part of a "Parents-As-Partners" theme.

Reading skills: comprehension strategies. The following reading skill areas, which facilitate comprehension, were focused upon in the workshops:

- Context and definition cues
- Paragraph organization
- Inferencing
- Classifying
- Predicting outcomes
- Rereading passages
- Vocabulary development
- Word relationships: Comparing/contrasting; alike/different

Writing skills: reinforcing reading skills. The centipede strategy is an example of the use of writing to reinforce reading skills. It is designed to encourage students to engage in sustained silent reading, that is, uninterrupted sessions of reading literature to themselves. On the basis of their reading, students write mini book reports or one-sentence opinions of

books. These are positioned on dittoed segments that compose a picture of a centipede. The centipede's body unfolds as the students progress with their writing.

Metacognitive skills: Tools for thinking. Metacognitive, or "thinking about thinking," strategies are used to teach the student to monitor his or her own thinking processes. The purpose is to make the student an independent reader, able to pinpoint his or her comprehension problems and to solve them. The following is a summary of the tools for thinking stressed in staff development workshops:

- Schema (Information) Deficits. A lack of prior knowledge in an area about which the student is reading or writing. When these information deficits are identified, the teacher and student can seek out the missing information.
- Brainstorming. Thinking aloud, usually in small groups, to arrive at more information about a subject.
- Story Grammar. Analyzing a story by identifying its separate elements such as character, setting, plot, and solution.
- Semantic Mapping. Making a visual representation of words and phrases arrived at in brainstorming sessions to find the meaning of a word.
- Sentence Starters. Completing phrases such as: "This means that . . ." to create a bridge between thinking and verbalization.

Parental Involvement. Another area addressed by this year's staff development workshops was how to develop greater parental involvement in the reading experience of students. One workshop presentation was devoted to at-home teaching tools for parents to use with their children. It was suggested that parents use story grammar strategies when reading with children at home asking

questions such as: "What are characters? What is the setting?"

Eleventh Annual Reading and Writing Workshops

Every year, a special week-long series of reading and writing workshops is held. This year's series was entitled, "Meeting the Needs of the Target Population Across the Curriculum." Each teacher participated in the series by presenting research on a teaching method and reporting on the application of the method in her classroom.

The following are selected examples of the topics covered as part of this series of presentations:

- Map Literacy: Applying Metacognitive Strategies to Content Area Materials. Introduction of a program of map-study skills using various teacher-made and commercially prepared materials.
- A Multimedia Approach to Facilitating the Comprehension Process Using Teacher-Made Comprehension Organizers. The use of highly motivational, commercially-prepared materials to facilitate comprehension.
- Applying Paragraph Organization Skills to Content Area Materials. Applying research-based strategies to paragraph organization using samples of texts from key subject areas.

Samples of lesson plans, teacher-made materials, charts, samples of students' work, and other written materials were distributed at the workshops.

Conclusion

In general, the workshops involved participants in a rich, in-depth exploration of metacognitive strategies and their application in the classroom. Presentations were well-organized, well-researched, and provided teachers with first-hand experience in using relevant skills and instructional techniques. The

participants were generally enthusiastic, actively questioning presenters, offering information, and eagerly participating in the hands-on aspects of the workshops.

CLASSROOM OBSERVATIONS

Introduction

In order to assess the implementation of the Reading Skills Center instructional goals and the impact of staff development, OREA evaluators conducted classroom observations. In conjunction with the observations of staff development workshops, OREA staff visited four Reading Skills Center teachers several times throughout the school year. This concentration on a few teachers over a long period of time provided an in-depth examination of the linkages between classroom activities and staff development. Two teachers at an M.I.U. and one at a leased neutral site were observed and interviewed about staff development four times each from November 1988 to April 1989. Another teacher at the leased neutral site was observed and interviewed three times during the same time period.

Classroom Environments

In the Reading Skills Center program each teaching space was shared by two teachers who worked with separate groups of students.* The leased neutral site was housed in a large, colorfully decorated room. The M.I.U. site, although less spacious, was bright and generously decorated. The following were

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* If one of the teachers is absent, the other will teach both groups.

displayed at these sites:

- A bulletin board headed, "The Writers' Workshop," with samples of students' writing;
- The "Writers'Checklist," a skills checklist chart;
- General writing by students including autobiographies, book reports, and monthly assignments relating to holidays;
- Seasonal displays relating to subject matter;
- Displays reflecting the children's ethnicity. For example, at one site there was a map indicating the students' countries of origin;
- Alphabet and weather charts, story grammar charts, and calendars; and
- Charts listing curriculum areas and children's names. The charts indicated when the students mastered curriculum areas.

In addition, the leased neutral site contained a large book library and an audio tape center.

Student Participation

In general, students applied themselves to the work at hand. When working in small groups, they appeared eager to participate. When working independently, they were focused on their tasks. One student was observed to be engrossed in reading a book about Robin Hood on his own while the teacher worked with another student. When the teacher discussed with the student what he had read independently, she found that his comprehension of the story was excellent.

Instructional Goals Implemented

The Reading Skills Center program was geared toward improving students' reading and writing performance through intensive, individualized instruction. The teachers observed

worked very closely with individual students. In addition, each student's progress in curriculum areas was charted by the teachers. Tasks were assigned at levels appropriate to students' achievement.

Some of the techniques used to develop students' skills were: reading aloud, sustained silent reading, reading comprehension exercises, and group and individual discussions. Writing exercises such as mini book reports, short essays describing students' personal experiences, and story summaries were often assigned.

Teacher Interviews

OREA evaluators talked with the teachers observed about the influence of staff development on their classroom activities. The teachers were very articulate about the uses of methods and concepts gleaned from the current staff development program and from staff development in past years. One teacher mentioned the October 1988 newsletter which focused on the particular story grammar techniques that she was using. Teachers were especially enthusiastic about the opportunity for communication with other Chapter 1 teachers that the workshops provided. In addition, they appreciated being kept abreast of the latest literature in the field.

Staff Development Implementation in the Classroom

In the lessons observed by OREA evaluators, the methods discussed at staff development workshops and in the newsletter were used extensively. The following are examples of ways in

which staff development was implemented in the classroom:

- A cartoon was used as a bridge to prepare students for the use of story grammar strategies with literature. Students analyzed the cartoon using a 'story organizer' separating characters, plot, and setting to better understand the story.

- In a conversation, a teacher used auditory vocabulary techniques to help the student arrive at the meaning of "predicting outcomes" without using the dictionary.

- Metacognition. A teacher told a student that he had made a good prediction about a story he was reading, making the student aware of his own thinking processes. At another point in the lesson, the student, answering comprehension questions about the passage read, skipped one of the questions and went on to the others. The teacher provided positive reinforcement for the student's recognition of his difficulty with the particular question and praised his decision to go on and answer the others. She asked, "Do you know how wonderful it was that you skipped that and went to the others?"

CONCLUSION

OREA evaluators found that Reading Skills Center teachers implemented many of the methods and concepts from their staff development training in the classroom. Skill areas and strategies focused upon in staff development were well-integrated with currculum areas to provide students with intensive, individualized instruction.

IV. STUDENT OUTCOMES

ATTENDANCE

Reading Skills Center teachers worked with an average of five students per session. Most students participated in four to five 30- to 60-minute sessions a week. The average attendance for the program was 96 percent.*

ACADEMIC ACHIEVEMENT FINDINGS

Methodology

The effect of the 1988-89 Reading Skills Center program on student achievement was determined by examining the change in participating students' scores on standardized tests from fall 1988 to spring 1989. The main objective for the 1988-89 Reading Skills Center program was that students would make a statistically significant mean N.C.E.** gain from pretest to posttest on the Reading Comprehension, Language Expression, and Language Mechanics subtests of the California Achievement Test (CAT). The Reading Comprehension subtest measured progress in reading, while the Language Expression and Language Mechanics subtests measured writing skills.

To determine whether the program reached its goal, students' raw scores were converted to N.C.E.s, and statistical analyses were carried out on these converted scores. Correlated *t*-tests

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*Aggregate attendance information was provided by program administration to OREA.

**A zero N.C.E. gain represents growth that is about the same as would be expected from participation in the regular classroom alone. A positive N.C.E. gain is assumed to be a direct result of participation in the Chapter 1 program.

were used to determine whether the mean gains were statistically significant. Statistical significance indicates whether the changes in achievement are real, or occur by chance. However, statistical significance can be exaggerated by large sample size or depressed by small sample size. Furthermore, statististical significance does not address the issue of whether the achievement changes are important to the students' educational development. Thus, an effect size (E.S)* is reported for each comparison to indicate the educational meaningfulness of each mean gain or loss, independent of the sample size.

Comparisons were made for two groups of Reading Skills Center students: those who received face-to-face instruction only and those who received a combination of face-to-face and C.A.I. Data were analyzed by grade for all students for whom pretest and posttest scores were available. Then, total mean differences were computed for each subtest.

In addition, a t-test was used to compare the overall mean gains of students receiving face-to-face instruction only and those receiving Combination Services. Finally, for students receiving face-to-face instruction only, the overall gain on the Reading Comprehension subtest in 1988-89 was compared with the overall gain on that subtest in 1987-88.

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*The E.S., developed by Jacob Cohen, is the ratio of the mean gain to the standard deviation of the gain. This ratio provides an index of improvement irrespective of the size of the sample. According to Cohen, .2 is a small E.S., .5 is a moderate E.S., and .8 is considered to be a large E.S. Only E.S.s of .8 and above are considered to be educationally meaningful.

Scores for Students Receiving Face-to-Face Instruction Only

Reading Comprehension Subtest. The mean N.C.E. gains for all grades and the overall mean gain were statistically significant, satisfying the program's criterion for success. The major findings for the Reading Comprehension subtest, shown in Table 2, are summarized below:

- The overall mean gain of 8.6 N.C.E.s (S.D.=9.7) was statistically significant and represented an educationally meaningful gain.
- Mean gains ranged from 6.0 N.C.E.s (S.D.=8.1) for the seventh grade to 10.9 N.C.E.s (S.D.=9.0) for the sixth grade.
- Except for the seventh grade, whose effect size was moderate, all effect sizes were educationally meaningful.

Language Expression Subtest. The mean N.C.E. gains for all grades and the overall mean gain on the Language Expression subtest were statistically significant, satisfying the program's criterion for success. The major findings for the Language Expression subtest, shown in Table 3, are summarized below:

- The overall mean gain of 7.8 N.C.E.s (S.D.=11.0) was statistically significant and represented a moderate effect size.
- The mean gains ranged from 5.0 N.C.E.s (S.D.=6.4) for grade eight to 10.5 N.C.E.s (S.D.=10.2) for grade seven.
- The effect sizes for grades four, five, and six were moderate. The effect sizes for grades seven and eight were large and educationally meaningful.

Language Mechanics Subtest. The mean N.C.E. gains for grades five and seven and the overall mean gain were statistically significant, satisfying the program's criterion for success. This criterion was not met, however, for grades four, six, and eight.

TABLE 2

Mean N.C.E. Differences on the Reading Comprehension Subtest of the CAT for Full-Year Face-to-Face Reading Skills Center Program Students, 1988-89

Grade	N	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference[a] Mean	Difference[a] S.D.	Effect Size
4	20	20.6	11.7	30.0	14.7	9.4	12.0	0.8
5	34	27.9	11.1	38.1	10.5	10.2	11.2	0.9
6	21	31.3	8.5	42.2	11.1	10.9	9.0	1.2
7	35	35.0	8.3	41.0	7.3	6.0	8.1	0.7
8	21	30.3	9.3	37.7	12.2	7.4	7.4	1.0
Total	131	29.7	10.7	38.3	11.4	8.6	9.7	0.9

[a]All mean differences were statistically significant at the $p \leq .05$ level.

- The overall mean gain of 8.6 N.C.E.s was statistically significant and represented an educationally meaningful effect size.
- Mean gains ranged from 6.0 N.C.E.s for the seventh grade to 10.9 N.C.E.s for the sixth grade and were all statistically significant.
- Except for the seventh grade, whose effect size was moderate, all effect sizes were large and educationally meaningful.

TABLE 3

Mean N.C.E. Differences on the Language Expression Subtest of the CAT for Full-Year Face-to-Face Reading Skills Center Program Students, 1988-89

Grade	N	Pretest		Posttest		Difference[a]		Effect Size
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
4	20	22.1	13.2	29.3	14.9	7.2	14.8	0.5
5	34	34.5	13.4	41.6	10.4	7.1	9.8	0.5
6	20	34.2	13.3	41.1	10.1	6.9	12.3	0.6
7	35	35.8	11.5	46.3	13.8	10.5	10.2	1.0
8	21	32.8	11.5	37.2	7.9	5.0	6.4	0.8
Total	130	32.8	13.4	40.6	13.8	7.8	11.0	0.7

[a]All mean differences were statistically significant at the $p \leq .05$ level.

- The overall mean gain of 7.8 N.C.E.s was statistically significant and represented a moderate effect size.
- The mean gains ranged from 5.0 N.C.E.s for grade eight to 10.5 N.C.E.s for grade seven. All mean gains were statistically significant.
- The effect sizes for grades four, five, and six were moderate. The effect sizes for grades seven and eight were educatonally meaningful.

The major findings for the Language Mechanics subtest, shown in Table 4, are summarized below:

- The overall mean gain of 7.7 N.C.E.s (S.D.=13.5) was statistically significant and represented a moderate effect size.
- Mean gains ranged from 2.5 N.C.E.s (S.D.=11.8) for grade eight to 12.1 N.C.E.s (S.D.=11.8) for grade seven. The mean gains for grades five and seven, 9.8 N.C.E.s (S.D.=14.9), and 12.1 N.C.E.s (S.D.=11.8), respectively, were statistically significant. The mean gains for grades four, six, and eight were not.
- The effect size for grade seven was large and educationally meaningful. The effect size for grade five was moderate. Effect sizes for grades four, six, and eight were small.

Comparison With Previous Years. In 1987-88 and 1988-89, students were tested with the 1985 edition of the CAT (CAT/E). In previous years, the 1977 edition (CAT/C) was used. Because national levels of achievement in the basic skills have increased in recent years, students tested with the CAT/E were being compared with a higher norm than that used to measure CAT/C results.*

A four-year comparison of overall mean gains from pretest to posttest on the Reading Comprehension subtest, as shown on Table 5, indicates the following:

- The overall mean gain increased from 1985-86 to 1986-87 from 11.9 N.C.E.s (S.D.=14.5) to 12.1 N.C.E.s (S.D.=13.3). These mean gains were statistically significant and educationally meaningful.
- The overall mean gain increased from 1987-88 to 1988-89 from 1.9 N.C.E.s (S.D.=13.8) to 8.6 N.C.E.s (S.D.=9.7).

*For more detailed information on the renorming of the CAT including "equated" scores on the Reading Comprehension subtest for CAT/E and CAT/C, see Evaluation Section Report:Chapter 1, Reading Skills Center Program, for 1987-88.

TABLE 4

Mean N.C.E. Differences on the Language Mechanics Subtest of the CAT for Full-Year Face-to-Face Reading Skills Center Program Students, 1988-89

Grade	N	Pretest		Posttest		Difference		Effect Size
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
4	20	27.3	13.6	32.0	14.3	4.7	14.9	0.3
5	33	31.9	16.5	41.7	19.6	9.8[a]	14.9	0.7
6	20	38.0	13.2	42.6	8.1	4.6	12.1	0.4
7	35	36.4	15.2	48.5	11.4	12.1[a]	11.8	1.0
8	21	46.1	13.5	48.6	13.7	2.5	11.8	0.2
Total	129	35.7	15.6	43.4	15.2	7.7[a]	13.5	0.6

[a]These mean differences were statistically significant at the $p \leq .05$ level.

- The overall mean gain of 7.8 N.C.E.s was statistically significant and represented a moderate effect size.
- Mean gains ranged from 2.5 N.C.E.s for grade eight to 12.1 N.C.E.s for grade seven. The mean gains for grades five and seven were statistically significant; the mean gains for grades four, six, and eight were not.
- The effect size for grade seven was educationally meaningful. The effect size for grade five was moderate. Effect sizes for grades four, six, and eight were small.

TABLE 5

Mean N.C.E. Gains of Face-to-Face Reading Skills Center Students on the Reading Comprehension Subtest of the CAT, Over Four School Years

Year	N	Mean Gain	S.D.	E.S.
1985-86[b]	546	11.9	14.5	0.8
1986-87[b]	182	12.1	13.3	0.9
1987-88[c]	191	1.9	13.8	0.1
1988-89[c]	131	8.6[a]	9.7	0.9

[a]This mean gain was statistically significant at $p \leq .05$.

[b]Students were tested with the 1977 edition of the CAT (CAT/C).

[c]Students were tested with the 1985 edition of the CAT (CAT/E).

- The overall mean gain increased from 1985-86 to 1986-87. These mean gains were statistically significant and educationally meaningful.
- The overall mean gain increased from 1987-88 to 1988-89. The mean gain for 1988-89 was statistically significant and educationally meaningful. The mean gain for 1987-88 was not statistically significant and represented a small effect size.

The mean gain for 1988-89 was statistically significant and educationally meaningful. The mean gain for 1987-88 was not statistically significant and represented a small effect size.

Scores for Students Receiving Combination Services

The following is a summary of findings concerning the overall mean gains from pretest to posttest for students receiving a combination of C.A.I. and face-to-face instruction. The program criterion for success was met on the Reading Comprehension and Language Mechanics subtests, but not on the Language Expression subtest. The following are the findings, shown on Tables 6, 7, and 8, for the three subtests:

- Reading Comprehension Subtest. The overall mean gain of 8.5 N.C.E.s (S.D.=13.8) was statistically significant and represented a moderate effect size. (See Table 6.)
- Language Expression Subtest. The overall mean gain of 1.2 N.C.E.s (S.D.=8.6) was not statistically significant and represented a small effect size. (See Table 7.)
- Language Mechanics Subtest. The overall mean gain of 6.1 N.C.E.s (S.D.=12.7) was statistically significant and represented a moderate effect size. (See Table 8.)

Comparison of Overall Mean Gains for Students Receiving Face-to-Face and Combination Services

An analysis of mean N.C.E. gains on the three subtests for face-to-face and combination services students shows that:

- There was no statistically significant difference between the overall mean gains for face-to-face and combination services students on the Reading Comprehension and Language Mechanics subtests.
- The overall mean gain of face-to-face students was higher than the gain of combination services students on the Language Expression subtest. This difference was statistically significant at the $p \leq .05$ level.

TABLE 6

Mean N.C.E. Differences on the Reading Comprehension Subtest of the CAT for Full-Year C.A.I.* Reading Skills Center Program Students, 1988-89

Grade	N	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference Mean	Difference S.D.	Effect Size
4	4	25.5	11.8	23.8	15.3	-1.7	9.0	0.2
5	7	19.7	7.5	27.7	11.0	-8.0	10.1	0.8
6	8	17.4	11.9	22.6	12.8	5.2	17.0	0.3
7	8	12.8	7.8	31.1	8.1	18.3[a]	10.1	1.8
8	3	16.3	16.0	22.0	3.0	5.7	17.6	0.3
Total	30	17.7	10.4	26.2	10.9	8.5[a]	13.8	0.6

[a]These mean differences were statistically significant at the $p \leq .05$ level.

- The overall mean gain of 8.5 N.C.E.s was statistically significant and represented a moderate effect size.
- The mean differences at each grade level cannot be interpreted because of the small number of students.

* All C.A.I. students received combination services.

TABLE 7

Mean N.C.E. Differences on the Language Expression Subtest of the CAT for Full-Year C.A.I.* Reading Skills Center Program Students, 1988-89

Grade	N	Pretest		Posttest		Difference		Effect Size
		Mean	S.D.	Mean	S.D.	Mean	S.D.	
4	4	25.5	12.7	24.5	18.9	-1.0	7.9	0.1
5	7	19.7	10.5	24.1	7.1	4.4	7.2	0.6
6	8	16.4	12.6	22.8	13.0	6.4[a]	7.5	0.9
7	8	22.0	6.3	19.9	10.8	2.1	9.0	0.2
8	3	24.7	6.7	16.7	3.5	-8.0	5.3	1.5
Total	30	20.7	10.1	21.9	11.1	1.2	8.6	0.1

[a]This mean difference was statistically significant at the $p \leq .05$ level.

- The overall mean gain of 1.2 N.C.E.s was not statistically significant and represented a small effect size.
- The mean differences at each grade level cannot be interpreted because of the small numbers of students.

*All C.A.I. students received combination services.

TABLE 8

Mean N.C.E. Differences on the Language Mechanics Subtest of the CAT for Full-Year C.A.I.* Reading Skills Center Program Students, 1988-89

Grade	N	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	Difference Mean	Difference S.D.	Effect Size
4	4	17.8	19.6	28.5	9.6	10.7	15.5	0.7
5	7	23.1	15.6	24.0	9.2	0.9	14.8	0.1
6	8	14.3	18.5	22.0	13.4	7.7	10.2	0.8
7	8	15.0	12.6	25.3	13.3	10.3[a]	10.0	1.0
8	3	21.0	5.3	17.7	16.0	-3.3	15.3	0.2
Total	30	17.7	15.1	23.8	11.8	6.1[a]	12.7	0.5

[a]These mean differences were statistically significant at the $p \leq .05$ level.

- The overall mean gain of 6.1 N.C.E.s was statistically significant and represented a moderate effect size.
- The mean differences at each grade level cannot be interpreted because of the small number of students.

*All C.A.I. students received combination services.

V. CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The major goal of the Reading Skills Center program is to use individualized instruction to enable students to develop competency in reading. The main objective of the 1988-89 program was that students would make statistically significant N.C.E. mean gains from pretest to posstest on the Reading Comprehension, Language Expression, and Language Mechanics subtests of the CAT. An analysis of test results by OREA showed that the Reading Skills Center program had a positive impact on student achievement and, on the whole, met the program criterion for success.

Face-to-Face Instruction

The overall mean gains on all the subtests for students receiving face-to-face instruction were statistically significant, meeting the program's criterion for success. The overall effect size on the Reading Comprehension subtest was large and educationally meaningful, while the effect sizes on the Language Expression and Language Mechanics subtests were moderate.

Over the past four years, the overall mean gains on the Reading Comprehension subtest showed fluctuations due, in part, to the renorming of the CAT. Scores improved from 1985-86 to 1986-87. However, there was an apparent drop in 1987-88. This drop may be accounted for by the use of the updated version of

the CAT (CAT/E) discussed in Chapter IV. Then, in 1988-89, mean gains improved considerably from the year before and approached the range of gains made in years when the CAT/C version was used. In 1987-88 the overall mean gain was 1.9 N.C.E.s (S.D.=13.8), while in 1988-89 the overall mean gain was 8.6 N.C.E.s (S.D.=9.7), an increase of 6.7 N.C.E.s.

Combination Services

The overall mean gains for students receiving face-to-face instruction in combination with C.A.I. were statistically significant for the Reading Comprehension and Language Mechanics subtests, meeting the program's criterion for success. The overall gain on the Language Expression subtest was not statistically significant and, thus, did not meet this criterion. The effect size on the Reading Comprehension subtest was moderate and the effect sizes on the Language Mechanics and Language Expression subtests were small.

Additional Conclusions

In addition to the above, the following conclusions may be drawn from OREA findings for the 1988-89 Reading Skills Center program:

- Among those receiving only face-to-face instruction, sixth grade students made the largest mean gain on the Reading Comprehension subtest, 10.9 N.C.E.s (S.D.=9.0).
- Among those receiving only face-to-face instruction, grade seven made the largest mean gain, on the Language Expression and Language Mechanics subtests, 10.5 N.C.E.s (S.D.=10.2), and 12.1 N.C.E.s (S.D.=11.8), respectively. However, grade seven made the lowest mean gain on the Reading Comprehension subtest, 6.0 N.C.E.s (S.D.=8.1).

- Among those receiving only face-to-face instruction, grade eight made the lowest mean gains on the Language Mechanics and Language Expression subtests, 2.5 N.C.E.s (S.D.=11.8), and 5.0 N.C.E.s (S.D.=6.4), respectively.

- Analyses of variance of the overall mean gains for face-to-face and combination services students on the three subtests showed a statistically significant difference between the two groups on the Language Expression subtest only. Face-to-face students' gains were higher than combination services students on this subtest.

RECOMMENDATIONS

- The smallest mean gains for face-to-face only students on all subtests were made by grades four, six, and eight, on the Language Mechanics subtest. An exploration of the reasons why this subtest showed smaller gains from pretest to posttest than the others might suggest areas for emphasis in next year's curriculum.

- Curriculum and instructional techniques implemented in areas showing the strongest positive results for face-to-face only students such as grade seven on the Language Mechanics and Language Expression subtests, and grades five and six on the Reading Comprehension subtest, should be reinforced.

- Since the overall mean gain for combination services students on the Language Expression subtest was not statistically significant and, therefore, did not meet the program's criterion for success, the ways in which combination services address language expression should be reviewed to see how these might be improved.

APPENDIX A

Brief Description of Chapter 1 Nonpublic School Reimbursable Services, 1988-89

Chapter 1 Nonpublic School Reimbursable Services provide supplementary, individualized instruction to students attending nonpublic schools in New York City. Students are eligible for Chapter 1 services if they live in targeted attendance area and score below a designated cutoff point on state-mandated or standardized reading tests.

On July 1, 1985, the Supreme Court held that instruction by public school teachers on the premises of nonpublic schools--local educational agencies' most common method of serving Chapter 1-eligible children--was unconstitutional. As a result, alternative methods for providing Chapter 1 services to eligible nonpublic school students were devised. Students attending nonpublic schools now receive Chapter 1 services at mobile instruction units, public school sites, leased neutral sites, and nondenominational schools and via computer-assisted instruction in designated classrooms in nonpublic schools.

CORRECTIVE READING PROGRAM

The Corrective Reading program provides instruction in reading and writing. The goal is to enable students to reach grade level in reading. During 1988-89, the program served 7,943 students in grades kindergarten through twelve in 162 nonpublic schools. The total included 3,287 students receiving computer-assisted instruction and 4,656 students receiving face-to-face instruction. Program staff included a coordinator, three field supervisors, and 90 Corrective Reading teachers. Instruction was provided to small groups of students, one to five days per week, in sessions ranging from 30 to 60 minutes. Chapter 1 funding totaled $7.8 million.

READING SKILLS CENTER PROGRAM

The Reading Skills Center program provides instruction in reading and writing to students in grades four through eight. The goal is to enable students to reach grade level in reading. During 1988-89, the program served 176 students from four nonpublic schools. Program staff included a coordinator and seven teachers. Instruction was provided to small groups of about five students, three to five days per week, for sessions lasting from 45 to 60 minutes. Chapter 1 funding totaled $552,903.

CORRECTIVE MATHEMATICS PROGRAM

The Corrective Mathematics program provides instruction in mathematics. The goals are to deepen students' understanding of mathematical concepts and to improve their ability to perform computations and solve problems. During 1988-89, the program served 5,806 students attending 130 nonpublic schools. The total included 3,689 students receiving face-to-face instruction and 2,117 students receiving computer-assisted instruction. Program staff included a coordinator, two field supervisors, and 70 Corrective Mathematics program teachers. Instruction was provided to small groups of students, one to five days per week, in sessions ranging from 45 to 60 minutes. Chapter 1 funding totaled more than $5.4 million.

ENGLISH AS A SECOND LANGUAGE

The English as a Second Language program provides intensive English language instruction to limited English proficient students. The goal of the program is to help students gain the listening, speaking, reading, and writing skills necessary to improve their performance in school. During 1988-89, the program served 2,445 students in kindergarten through eighth grade in 69 nonpublic schools. Two thousand and twelve of these students received face-to-face instruction, and 433 of them computer-assisted instruction. In addition, a Read-Along component provided some students with tape recorders, storybooks, and audio tapes for home use. Program staff included a coordinator, two field supervisors, and 42 teachers. Instruction was provided to small groups of students, two to three days a week, in sessions ranging from 30 to 60 minutes. Chapter 1 funding totaled $2.7 million.

CLINICAL AND GUIDANCE PROGRAM

The Clinical and Guidance program provides diagnostic and counseling services to students enrolled in Chapter 1 nonpublic school programs--Corrective Reading, Reading Skills Center, Corrective Mathematics, and English as a Second Language. The goal of the program is to alleviate emotional or social problems that interfere with the students' ability to profit from remedial education. During 1988-89, the program served 5,707 students from 123 nonpublic schools. The staff included two coordinators, two field supervisors, 58 guidance counselors, 36 psychologists, one psychiatrist, and 12 social workers. Chapter 1 funding totaled $5.8 million.